

REMARKS

In the present Amendment, Claim 1 has been amended to recite that a cis-1,4 bond content and a vinyl bond content in the 1,3-butadiene monomer unit as measured by a Fourier transform infrared spectroscopy (FT-IR) and calculated according to equations (IV) and (VI) are not less than 98.0% and not more than 0.3%, respectively. Section 112 support for this amendment may be found, for example, in paragraph [0010] at page 4 of the specification.

Claim 8 has been amended to combine with a part of original Claim 12 and to recite that monomers at least containing 1,3-butadiene are polymerized through a polymerization method except for a vapor-phase polymerization. Section 112 support for this amendment may be found, for example, in original Claim 12, paragraph [0049] and Examples of the specification.

New Claims 17 and 18 have been added. Claim 17 corresponds to original Claim 9, but depends from Claim 11. Claim 18 corresponds to original Claim 10, but depends from Claim 17.

Claims 9, 10 and 12 have been cancelled without prejudice or disclaimer.

No new matter has been added, and entry of the Amendment is respectfully requested.

Upon entry of the Amendment, Claims 1-8, 11 and 13-18 will be pending.

At page 2 of the Action, Claims 8 and 9 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Pedretti et al (U.S. 4,429,089).

Applicants submit that this rejection should be withdrawn because Pedretti et al does not disclose or render obvious the presently claimed method of producing a butadiene-based polymer.

Claim 9 has been cancelled, leaving Claim 8 subject to this rejection.

As noted, Claim 8 has been amended to combine with Claim 12, wherein the catalyst system is previously prepared. Claim 12 is not subject to this rejection. Accordingly,

reconsideration and withdrawal of the § 102(b) rejection of Claims 8 and 9 based on Pedretti et al are respectfully requested.

At page 3 of the Action, Claims 1-7 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly being obvious over Pedretti et al.

Applicants submit that this rejection should be withdrawn because Pedretti et al does not disclose or render obvious the presently claimed butadiene-based polymer.

In Pedretti et al, the cis content is measured by the Fourier transform infrared spectroscopy (FT-IR) similar to that of the present invention, however, the subsequent calculation method is entirely different from that of the present invention. In the synthesis conditions of Pedretti et al, the cis content is less than 98% as calculated by the equation (IV) according to the present invention, accordingly, the construction of Pedretti et al is entirely different from that of the present invention.

In view of the above, reconsideration and withdrawal of the rejection of Claims 1-7 based on Pedretti et al are respectfully requested.

At page 4 of the Action, Claims 13-16 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Pedretti et al in view of Sandstrom et al (U.S. 6,046,266).

Applicants submit that this rejection should be withdrawn for essentially the same reasons that the rejection of Claims 1-7 based on Pedretti et al should be withdrawn as discussed above. Sandstrom et al is relied upon as teaching the benefits of including cis-1,4-polybutadiene rubber in tire tread and sidewall. Therefore, Sandstrom et al does not make up for the deficiencies of Pedretti et al.

Claims 17 and 18 are patentable over Pedretti et al and Pedretti et al in view of Sandstrom et al because Claims 17 and 18 depend from Claim 11, directly or indirectly, and Claim 11 is not subject to the rejections based on Pedretti et al and Pedretti et al in view of Sandstrom et al.

At page 4 of the Action, Claims 8-12 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sylvester et al (U.S. 5,858,903).

Applicants submit that this rejection should be withdrawn because Sylvester et al does not disclose or render obvious the presently claimed method of producing a butadiene-based polymer.

Sylvester et al disclose vapor-phase polymerization of butadiene. In contrast, Claim 8 as amended is characterized in that monomers at least containing 1,3-butadiene are polymerized through a polymerization method except for a vapor-phase polymerization. In the vapor-phase polymerization employed by Sylvester et al, the temperature of the vapor-phase as a medium can be controlled, but the temperature of the reaction site in which synthetic reaction progresses is higher than that of the vapor-phase. Therefore, when the monomers are polymerized through the vapor-phase polymerization, the reaction temperature may be higher than 25°C.

Further, when the catalyst system is previously prepared, the catalyst system has a catalytic activity and therefore the butadiene-based polymer can be synthesized at a lower temperature for a shorter time.

In view of the above, reconsideration and withdrawal of the § 103(a) rejection of Claims 8-12 based on Sylvester et al are respectfully requested.

Allowance is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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